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Date: December 29, 2006

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

Applicant(s): Ravisankar V. Pudipeddi, *et al.*

Examiner: Baoquoc N. To

Serial No: 10/700,729

Art Unit: 2162

Filing Date: November 4, 2003

Title: LEGACY FILTER SUPPORT IN A NEW MANAGED FILE SYSTEM FILTER MODEL

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir:

Appellants' representative submits this brief in connection with an appeal of the above-identified patent application. A credit card payment form is filed concurrently herewith in connection with all fees due regarding this appeal brief. In the event any additional fees may be due and/or are not covered by the credit card, the Commissioner is authorized to charge such fees to Deposit Account No. 50-1063 [MSFTP530US].

I. Real Party in Interest (37 C.F.R. §41.37(c)(1)(i))

The real party in interest in the present appeal is Microsoft Corporation, the assignee of the present application.

II. Related Appeals and Interferences (37 C.F.R. §41.37(c)(1)(ii))

Appellants, appellants' legal representative, and/or the assignee of the present application are not aware of any appeals or interferences which may be related to, will directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims (37 C.F.R. §41.37(c)(1)(iii))

Claim 2 was cancelled without prejudice or disclaimer during prosecution. Claims 1 and 3-34 stand rejected by the Examiner. The rejection of claims 1 and 3-34 is being appealed.

IV. Status of Amendments (37 C.F.R. §41.37(c)(1)(iv))

No claim amendments have been entered after the Final Office Action.

V. Summary of Claimed Subject Matter (37 C.F.R. §41.37(c)(1)(v))**A. Independent Claim 1**

Independent claim 1 recites a computer system that facilitates management of a file system filter, comprising: at least one minifilter that has an integer altitude value associated therewith; and a filter manager that maps altitudes of the at least one minifilter to legacy filter order groups. (*See e.g.*, page 8, line 3-page 12, line 7, page 12, line 20-page 13, line 8; and *see generally*, Figures 1 and 3).

B. Independent Claim 13

Independent claim 13 recites a computer implemented method for managing a file system filter, comprising: loading at least one minifilter to a file system; and determining

an integer altitude value associated with the at least one minifilter. (See *e.g.*, page 16, line 17-page 17, line 15; *see generally*, Figures 5-7).

C. Independent Claim 29

Independent claim 29 recites a computer system that facilitates management of a file system filter, comprising: means for mapping integer value altitudes of minifilters to legacy filter order groups. (See *e.g.*, page 8, lines 3-16, page 8, lines 23-26, and page 9, line 3-page 10, line 14). Additionally, independent claim 29 also recites means for determining an altitude interval associated with at least one frame. (See *e.g.*, page 14, line 5-page 16, line 16).

The means for limitations described above are identified as limitations subject to the provisions of 35 U.S.C. §112 ¶6. The corresponding structures are identified with reference to the specification and drawings in the parentheticals above corresponding to those claim limitations.

VI. Grounds of Rejection to be Reviewed (37 C.F.R. §41.37(c)(1)(vi))

A. Claims 1 and 3-34 stand rejected under 35 U.S.C. §101 because it is alleged the subject claims are not statutory as they to recite a number of computing steps without producing tangible result and/or being limited to practical application within the technological art.

B. Claims 1 and 3-34 stand rejected under 35 U.S.C. §102(e) as being anticipated by Golds *et al.* (US2001/0020245).

VII. Argument (37 C.F.R. §41.37(c)(1)(vii))

A. Rejection of Claims 1 and 3-34 Under 35 U.S.C. §101

Claims 1 and 3-34 stand rejected under 35 U.S.C. §101 because it is alleged the subject claims are not statutory as they to recite a number of computing steps without producing tangible result and/or being limited to practical application within the

technological art. This rejection should be reversed for at least the following reasons. The subject claims recite a useful, concrete and tangible result.

Independent claims 1, 13, and 29 each produce one or more useful, concrete and tangible result. Independent claim 1 recites: *a computer system that facilitates management of a file system filter, comprising: at least one minifilter that has an integer altitude value associated therewith; and a filter manager that maps altitudes of the at least one minifilter to legacy filter order groups.* As can be seen independent claim 1 provides a computer system that facilitates management of a file system filter. In order to facilitate such management of the file system filter, a filter manager maps integer altitude values associated with at least one minifilter legacy filter order group. It is submitted that the aforementioned results are useful, concrete and tangible, as such results allow for coexistence between legacy filters already part of a file system and new filters, thus mitigating the need for developers of legacy filters to perform substantial modification on legacy filters in order to ensure coexistence with new filters.

Further, independent claim 13 provides: a computer implemented method for managing a file system filter, comprising: loading at least one minifilter to a file system; and determining an integer altitude value associated with the at least one minifilter. The subject claim, like independent claim 1, recites useful, concrete and tangible results, namely, a computer-implemented method for managing a file system filter, loading at least one minifilter to a file system, and determining an integer altitude value associated with the at least one loaded minifilter.

Moreover, independent claim 29 recites one or more useful concrete and tangible results, namely: mapping integer value altitudes of minifilters to legacy filter order groups, and determining an altitude interval associated with at least one frame, thereby facilitating management of a file system filter.

Additionally, the Examiner appears once again to be under the misapprehension that 35 U.S.C. §101 requires claims to contain limitations to practical applications in the technological arts. Appellants' representative disagrees. United States patent law has never supported the application of a "technological aspect" or "technological arts" requirement. Title 35 of the United States Code does not recite, explicitly or implicitly, that inventions must be within the "technological arts" to be patentable. Section 101 of

Title 35 recites “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore ...” Accordingly, while an invention must be “new” and “useful,” there is no statutory requirement that it fit within a category of “technological arts.” Moreover, while there has been some judicial discussion of the expression “technological arts” and its relationship to patentability, this dialogue has been limited and its viability questioned. In 1970, the Court in *In re Musgrave*, 431 F.2d 882, 167 USPQ 280 (CCPA 1970) introduced a standard for evaluating process claims under Section 101: any sequence of operational steps is a patentable process so long as it is within the technological arts so as to promote the progress of useful arts. While a few subsequent courts have made reference to this so-called “technological arts” standard, the Supreme Court in *Gottschalk v. Benson*, 409 U.S. 63, 175 USPQ 673 (1972) refused to adopt this standard when it reversed the Court of Customs and Patent Appeals decision in the aforementioned case. Moreover, the Court of Customs and Patent Appeals effectively rejected the technological arts test in *In re Toma*, 575 F.2d 872, 878, 197 USPQ 852, 857 (CCPA 1978), by strongly suggesting that *Musgrave* was never intended to create a technological arts test for patent eligibility:

The language which the examiner has quoted [from *Musgrave* and its progeny relating to “technological arts”] was written in answer to “mental steps” rejections and was not intended to create a generalized definition of statutory subject matter. Moreover, it was not intended to form a basis for a new § 101 rejection as the examiner apparently suggests. *In re Toma*, 575 F.2d at 878, 197 USPQ at 857.

Moreover, the “technological arts” consideration is completely devoid from recent Federal Circuit cases like *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, (Fed. Cir. 1999), and *State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1373, 47 USPQ2d 1596, 1601 (Fed.Cir.1998).

It is submitted that the “technological arts” requirement propounded by *Musgrave* should be confined to its facts and holding, *i.e.*, that the computer-related invention in dispute was a patentable invention within the meaning of Section 101 because it was an

advancement in technology which clearly promoted the useful arts. Thus, the decision in *Musgrave* should not be construed as a “technological arts” requirement for patentability, but rather as a proposition that computer-implemented process claims might be patentable subject matter.

Further, in *Ex parte Lundgren*, Appeal No. 2003-2088, Application 08/093,516, (Precedential BPAI opinion September 2005), the Board rejected the Examiner’s argument that *Musgrave* and *Toma* created a technological arts test. “We do not believe the court could have been any clearer in rejecting the theory the present examiner now advances in this case.” *Lundgren*, at 8. The Board held that “there is currently no judicially recognized separate ‘technological arts’ test to determine patent eligible subject matter under § 101.” *Lundgren*, at 9. Thus, in view of the foregoing it is evident that there are no recognized exceptions to eligible subject matter other than laws of nature, natural phenomena, and abstract ideas.

In view of at least the foregoing, it is apparent that appellants’ claimed invention produces a useful, concrete and tangible result pursuant to *AT&T Corp. v. Excel Communications, Inc.*, and the Examiner’s contention that the subject claims must be limited to a practical application within the technological arts lacks support from either 35 U.S.C. §101 or the Federal Courts’ precedential interpretation thereof. Accordingly, reversal of this rejection with respect to independent claims 1, 13, and 29 (and claims that depend there from) is requested.

B. Rejection of claims 1 and 3-34 Under 35 U.S.C. §102(e)

Claims 1 and 3-34 stand rejected under 35 U.S.C. §102(e) as being anticipated by *Golds et al.* (US2001/0020245). This rejection should be reversed for at least the following reasons. *Golds et al.* fails to disclose or suggest all features recited in the subject claims.

For a prior art reference to anticipate, 35 U.S.C. §102 requires that “*each and every element* as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950 (Fed. Cir. 1999) (*quoting*

Verdegaal Bros., Inc. v. Union Oil Co., 814 F.2d 628, 631,
2 USPQ2d 1051, 1053 (Fed. Cir. 1987)) (emphasis added).

Appellants' claimed subject matter relates generally to computer systems, and more particularly to systems and methods that facilitate ordering of file systems and file system filters. In one instance, the claimed subject matter provides a filter manager that allows coexistence between legacy filters already extant as part of a file system and newer filters, thereby facilitating management of the priority and/or ordering of such filters and their execution. Such a filter manager infrastructure can mitigate the necessity for developers of legacy filters to perform substantial modification on these filters because the disclosed management infrastructure seamlessly allows legacy filters to coexist with newer filters. Accordingly, appellants' claimed subject matter permits filter managers to insert newer "minifilters" between other filters to create a new filter framework. Working within a legacy filter framework, minifilters can be moved as desired. Moreover, minifilters can dynamically change their own position as desired, and as such advantageously enhances the ability of a filter manager to sort incoming requests. To this end, independent claim 1 (and similarly, independent claims 13 and 29) recites: at least one minifilter that has an integer altitude value associated therewith. *Golds et al.* fails to disclose or suggest this aspect of the invention as claimed.

Golds et al. discloses a system and method for ordering software modules in a guaranteed order for execution wherein unique ordering values are statically assigned to software modules. The Examiner contends that the cited document discloses the pertinent aspect of the subject claims at page 4, paragraphs 0033 and 0035. Page 4, paragraph 0033 provides for the assignment of ordering values to drivers, wherein the drivers, based on their functionality, are grouped into classes such that within each class various rules can be employed to assign ordering values to the drivers. Page 4, paragraphs 0035-0036 further provides that once classified into a group, each driver is given an ordering value in a range based on its class type that is a floating-point value. The ordering value taking the form of 0.ABBB, where the first character identified by "A" is employed to define a general class or family of driver types, and the characters "BBB" are utilized to order individual drivers within the general class of driver types.

The claimed subject matter in contrast, employs and assigns integer values to facilitate ordering of file systems and file system filters, rather than assigning floating point values to software modules. As would be understood by those of ordinary skill in the art there is a clear distinction, albeit subtle, between floating point and integer representations. An integer, as would be comprehended by those cognizant in the art, is a whole number (*e.g.*, a natural number, a number that is neither a fraction nor a mixed fraction). A floating point number in contrast is not an integer as it is representative of numbers with fractional parts to them. It is thus clearly apparent that appellants' claimed subject matter and the cited document are distinguishable.

Additionally, the standard by which anticipation is to be measured is *strict identity* between the cited document and the subject matter as claimed, not mere equivalence or similarity. *See, Richardson* at 9 USPQ2d 1913, 1920. This means that in order to establish anticipation under 35 U.S.C. §102, the single document cited must not only expressly or inherently describe each and every limitation set forth in the patent claim, but also the identical invention must be shown in as complete detail as is contained in the claim. The fact that *Golds et al.* fails to employ and assign integer values to facilitate ordering of file systems and file system filters, but rather assigns floating point values to software modules would lead one of ordinary skill to the belief that the cited document in the final analysis, does not provide an invention identical to that recited in the subject claims. Accordingly, in view of at least the foregoing, reversal of this rejection with respect to independent claims 1, 13 and 29, and associated dependent claims, is requested.

C. Conclusion

For at least the above reasons, the claims currently under consideration are believed to be patentable over the cited references. Accordingly, it is respectfully requested that the rejections of claims 1 and 3-34 be reversed.

If any additional fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Respectfully submitted,
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VIII. Claims Appendix (37 C.F.R. §41.37(c)(1)(viii))

1. A computer system that facilitates management of a file system filter, comprising:
at least one minifilter that has an integer altitude value associated therewith; and
a filter manager that maps altitudes of the at least one minifilter to legacy filter order groups.
2. (Cancelled)
3. The system of claim 1, the altitudes are unique values.
4. The system of claim 3, the altitudes define the full order of the minifilters with respect to each other.
5. The system of claim 1, multiple instances of the filter manager attach to a file system stack.
6. The system of claim 5, each instance of the filter manager is associated with a unique interval of altitude values.
7. The system of claim 1, the at least one minifilter is coded to permit dynamic loading and/or unloading to a filter stack.
8. The system of claim 7, the altitude of the at least one minifilter ensures that the at least one minifilter, if unloaded, will reload to its previous position in the filter stack.
9. The system of claim 1, further comprising at least one frame dynamically associated with a single minifilter.
10. The system of claim 1, further comprising at least one frame dynamically associated with at least one minifilter.

11. The system of claim 10, further comprising a numerical interval associated with each frame.
12. The system of claim 11, the altitude of at least one minifilter has a value within the numerical interval associated with each frame.
13. A computer implemented method for managing a file system filter, comprising:
 - loading at least one minifilter to a file system; and
 - determining an integer altitude value associated with the at least one minifilter.
14. The method of claim 13, further comprising scanning at least one filter manager frame in the file system to find an altitude interval [L, H] associated with the at least one filter manager frame, wherein L is the lower boundary value of the interval and H is the upper boundary value of the interval.
15. The method of claim 14, further comprising scanning filter manager frames to determine a frame altitude interval that encompasses the altitude value of the at least one minifilter, such that $L < X < H$, wherein X is the altitude of the at least one minifilter.
16. The method of claim 15, further comprising inserting the at least one minifilter into the filter manager frame with a corresponding altitude interval upon discovery thereof.
17. The method of claim 16, further comprising updating a filter object associated with the at least one minifilter to point to the frame into which the minifilter has been inserted.
18. The method of claim 15, further comprising scanning filter manager frames for altitude intervals, $[L_1, H_1]$ and $[L_2, H_2]$, adjacent to the altitude value X of the at least one minifilter if no single interval [L, H] encompassing the altitude value X of the at least one minifilter is found, such that the value of the altitude, X, of the at least one minifilter is

greater than the upper boundary value of the lower interval H_1 and less than the lower boundary value of the higher interval L_2 .

19. The method of claim 18, further comprising:

- inserting the at least one minifilter into the frame having the higher interval;
- adjusting the interval of the frame to $[X, H_2]$; and
- initializing the filter object associated with the at least one minifilter to point to the frame into which the at least one minifilter has been inserted.

20. The method of claim 18, further comprising creating a new frame and stacking the new frame at the top of the file system stack, if no intervals adjacent to the altitude value of the at least one minifilter are found.

21. The method of claim 20, further comprising pre-allocating the new frame for management of the at least one minifilter.

22. The method of claim 21, further comprising calling the filter manager's file system notification routine to submit a request to register for file system notifications.

23. The method of claim 22, further comprising:

- inserting the minifilter into the new frame;
- initializing the frame interval upper and lower boundary values to the altitude value of the at least one minifilter such that the interval is $[H, X]$; and
- updating a filter object associated with the at least one minifilter to point to the new frame;

wherein the request to register was successful.

24. The method of claim 22, further comprising:

- removing the new frame from the filter stack;
- extracting the altitude interval from the next lower, now top-most, frame in the stack;

collapsing the at least one minifilter into the top-most frame; and
adjusting the frame interval so that the upper boundary value is set equal to the value of the altitude of the at least one minifilter, such that the adjusted interval is $[L, X]$; wherein the request for registration failed.

25. The method of claim 22, further comprising determining the identity of a frame calling into the file system notification routine.

26. The method of claim 25, wherein the identity of the frame is determined by counting the number of all filter manager device objects, N , already in the stack, from top to bottom, using existing application programming interfaces, and wherein each device object represents a frame.

27. The method of claim 26, further comprising initializing a counter to N and decrementing the counter for every node encountered from the bottom to the top of the stack.

28. The method of claim 27, wherein a zero value in the counter represents the position of the frame that corresponds to the attachment of the filter manager.

29. A computer system that facilitates management of a file system filter, comprising:
means for mapping integer value altitudes of minifilters to legacy filter order groups; and
means for determining an altitude interval associated with at least one frame.

30. The system of claim 29, further comprising means for inserting at least one minifilter into a frame.

31. The system of claim 30, further comprising means for altering a frame interval to embrace a given minifilter altitude.

32. The system of claim 29, further comprising means for creating a frame for management of at least one minifilter.

33. A computer readable medium having stored thereon the computer executable minifilters and filter manager of claim 1.

34. A computer readable medium having stored thereon computer executable instructions for performing the method of claim 13.

IX. Evidence Appendix (37 C.F.R. §41.37(c)(1)(ix))

None.

X. Related Proceedings Appendix (37 C.F.R. §41.37(c)(1)(x))

None.